

the existence of an endostyle—a system of ramified intestinal tubules—and of other organs precisely resembling those described in the latter genus. The “hepatic organ” of Savigny is the testis, while the female generative organ consists of solitary pedicellate ova. The arrangement of their parts is essentially the same as in *Salpa*, only that the fœtus does not appear to be developed in placental connexion with the parent.

The *Pyrosomata* increase by gemmation also, but the gemmæ are solitary and do not form chains, becoming developed like those of the ordinary compound Ascidians between the pre-existing forms.

In the next section, the zoological relations of the *Salpæ* and *Pyrosomata*, with the other Ascidians, are inquired into. The author endeavours to show that there is no essential difference of organization between the ordinary Ascidians and the *Salpæ*; that the two forms grade insensibly one into the other; and that there is, therefore, no ground for breaking up the great ascidian family into the two subdivisions of Monochitonida and Dichitonida.

With regard to the theory of the “alternation of generations,” the author submits that it is by no means a proper expression for the phenomena presented by the *Salpæ*. According to the author’s view, the two forms of *Salpa* are not two generations of distinct individuals, but are, properly speaking, organs, and only when taken together, equivalent to an individual, in the sense in which that term is used among the higher animals.

For these pseudo-individuals, in this and all analogous cases, the author proposes the name of “*zooids*,” simply for the purpose of avoiding the apparent paradox of calling these highly-organized independent forms “*organs*,” though such, in the author’s opinion, they really are.

The following letter, addressed to S. Hunter Christie, Esq., Sec. R.S., by James Glaisher, Esq., F.R.S., “On the Extraordinary Fall of Rain in the neighbourhood of London on the 15th instant,” was read.

“13 Dartmouth Terrace, Blackheath.
1851, March 27.

“MY DEAR SIR,—The fall of rain in the neighbourhood of London on the 15th instant was so remarkable, that I think an account of it will be interesting to the Fellows of the Royal Society.

“At Greenwich it commenced falling about 1 o’clock A.M., and by 9^h A.M. the amount fallen was 1 inch, and by 4 o’clock P.M. at the Royal Observatory 1·45 inch was measured; at Lewisham the fall was 1·725 inch; in London an inch nearly had fallen by 9^h A.M., and by 4^h P.M. the amount collected was 1·25 inch.

“These quantities are unusual at any season, but particularly so in the month of March; there is no record either in the MSS. of the Royal Observatory, or in the Philosophical Transactions, of so large a fall in any day in the month of March, and, so far as I can find, it is unprecedentedly large.

“The annexed table shows the amount of rain fallen on this day at various places in England and Ireland.

Names of Places.	Fall of rain in inches.	Wind.	Remarks.
		Direction.	
Jersey	0·350	W.N.W.	
Guernsey	0·888	W.	
Helston	0·000		0 ⁱⁿ ·56 fell on Sunday the 16th.
Falmouth	0·047	W.N.W.	
Truro	0·150	W.N.W.	Showery: blowing fresh.
Exeter	0·180	N.W.	
Gosport	0·890	N.N.E.	Ceased raining at 7 ^h A.M.
Southampton	1·060	N.	The rain fell before 8 ^h A.M.
Midhurst	0·970	N.	
Uckfield	1·200	N.E.	The greater part fell in 6 hours.
Valentine Terrace	1·360	E.N.E.	The direction of the wind on March 14 was S.W. till 5 ^h P.M.; it then veered to S. by W. till 11 P.M.; it was S.E. at midnight; on the 15th at 1 ^h it suddenly changed to N.E., and during the time of the heavy fall of rain it was E.N.E.; at noon it was N., after which it was N.N.W.
Greenwich R. Obs.	1·450	E.N.E.	
Hyde Vale, Greenwich ...	1·55	E.N.E.	
Lewisham	1·725	E.N.E.	
Fleet Street, London	1·280	E.N.E.	
Chiswell Street, London ..	1·200	E.N.E.	
Westminster	1·00	E.N.E.	
St. John's Wood	1·044	E.N.E.	The rain ceased at 3 ^h P.M.
Hungerford	0·050	S. to S.W.	
Burnslade	0·180	S. to W.	
Foxhangers	0·100	W.	
Bradford	0·020		
Crofton	0·000	S. to W.	
Radcliffe Obs., Oxford ...	0·228	N.	Cloudy. [clouds.
Rose Hill near Oxford ...	0·276	N.	Fine day, interrupted with flying
Linslade	0·520	N.	Rain ceased falling at noon.
Stone	0·490	N.	} Rain falling all day; the Chil- tern hills are covered by snow.
Hartwell	0·530	N.	
Cardington	0·345	N.E.	Rain all day.
Norwich	0·130	N.E.	Rain all day.
Holkham	0·160	E.	Thin rain occasionally all day.
Nottingham	0 00	N.E.	Misty: a fine day.
Grantham	0·00	calm.	Calm: foggy: dull.
Hawarden	0·00	S.	
Liverpool	0·006	S.	
Manchester	0·000	S.E.	
Wakefield	0·770	var.	[sunshine.
York	0·000	S. by W.	A brilliant day, almost continued
North Shields	0·000	S.W.	A fine sunny day.
Durham	0·000	S.W.	Our falls of rain have been after those in the south.
Stonyhurst	0·074	E.S.E.	Fine and sunny during the day.
Whitehaven	0·252	W.S.W.	
Glasgow	0·080	E.N.E.	Rain.
Dunino near St. Andrews	0·000	S.S.W.	
<i>Ireland.</i>			
Cork	0·000	calm.	Sun was shining all day.
Bridgetown near Wexford	0·000	W.	Cloudy.
Ennis	0·100	N.W.	Showers: partially cloudy.
Longford	0·060	W. & N.W.	Showery.
Strokestown	0·045	N.	Forenoon showery, aftern. fine.
Carrick-on-Shannon	0·019	W.	Forenoon fair, aftern. showery.

“By reference to this table, it will be seen that the heavy fall extended over the counties of Middlesex, Kent, Sussex and Hamp-

shire, and that the direction of the wind over these counties during the time was chiefly N. and E.N.E. At many places the day was fine and bright.

"The change of wind from S. nearly to S.E. by midnight on the 14th, and to N.E. at about the time the fall began, and the change of wind just before the rain ceased to N.N.W., indicate that this great fall of rain in so short a time was attributable to the meeting of two currents of air of different temperatures, and the consequent great deposition of moisture.

"It will be seen that the weather in Ireland on this day was for the most part fine.

"I am, dear Sir,

"Yours very faithfully,

"JAMES GLAISHER."

"P.S. The average fall of rain in the month of March is about 1·7 inch."

"S. H. Christie, Esq.,
Sec. R. S."

April 3, 1851.

LIEUT.-COLONEL SABINE, R.A., V.P. & Treas. in the Chair.

A paper was read, entitled "*Observations upon Appendicularia and Doliolum.*" By Thomas H. Huxley, Esq. Communicated by E. Forbes, Esq., F.R.S. Received Feb. 26, 1851.

This is a description of two Ascidian genera which possess very considerable interest: *Doliolum*, as forming a link between the *Pyrosomata* and *Salpæ*; and *Appendicularia*, as representing in a permanent form the larval state of the Ascidians, long ago described by M. Milne-Edwards.

Appendicularia, which has been also imperfectly described under the names of *Oikopleura* and *Venillaria*, is in fact an ascidian provided with a long vibratile fin or tail, by the aid of which it swims freely about.

That it is an adult form is shown by the existence of a well-developed testis, but the author leaves undecided the nature of the female organs.

On the other hand it seems doubtful whether *Doliolum* is truly an independent form, or whether it is not rather a detached "zoöid" of the genus *Auchenia*.

A paper was also in part read, entitled "*Researches into the Molecular Constitution of the Organic Bases.*" Part II. By A. W. Hofmann, Ph.D. Communicated by Professor Graham, F.R.S. Received March 12, 1851.
